

Written Testimony of Mr. Terry Hall  
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Before the Committee on Homeland Security, Subcommittee on Emergency Preparedness,  
Response and Communications, United States House of Representatives

“Resilient Communications: Current Challenges and Future Advancements”  
September 12, 2012

Good afternoon, Chairman Bilirakis, Ranking Member Richardson, and Members of the Subcommittee. My name is Terry Hall and I am the President of the Association of Public-Safety Communications Officials, International, known as APCO. I am also the Chief of Emergency Communications for the York County Regional Emergency Communications Center in Virginia. APCO is the world’s largest organization of public safety communications professionals, including members from police, fire, and emergency medical services, as well as 9-1-1 public safety answering points, referred to as PSAPs, and emergency operations centers.

Thank you for the opportunity to speak with you today about the importance of resilient communications for the public safety community. This is a timely topic and I’m pleased to see this subcommittee’s interest in exploring these issues.

Certainly, the need for resiliency was engrained into the design of my Communications Center in York County. I made sure to build redundancy into this center based on my years of experience coping with the loss of commercial electrical power and telephone network outages. As the Project Manager for the regional public safety radio communications system in that part of Virginia, I also am aware of the need for highly reliable communications networks that survive natural and man-made disasters. My experience with the importance of network resiliency and reliability was especially enlightened during my deployments as an urban search and rescue and disaster medical assistance team member following Hurricanes Katrina, Rita, Isabelle and Gustav.

Although highlighted by the recent “Derecho” storm last June that wreaked havoc in the DC area, 9-1-1 outages are not all that uncommon – such outages have occurred across the country for decades, with a variety of causes, and are not specific to any one telephone company. This has led some in the public safety community to attempt to insulate themselves as much as possible, as I have done in York County, from outages occurring at telephone company facilities that could adversely impact 9-1-1 call centers. In York and James City Counties, for example, we bypassed the public telephone network by directly connecting two public safety answering points for redundancy purposes.

We applaud the recent efforts of the Federal Communications Commission to explore the causes and potential solutions of 9-1-1 outages. APCO recently filed public comments with the FCC on August 17<sup>th</sup>.

As APCO pointed out in its comments, the June Derecho storms cut off electricity to millions, caused substantial property damage, and, most regrettably, loss of life. The storms also led to

widespread and unusually extended disruptions to 9-1-1 service in several areas, especially in the Northern Virginia suburbs of Washington, DC.

During and following the Derecho storms, many of APCO's members were forced to operate 9-1-1 call centers under severe and frustrating conditions. At least a portion of the 9-1-1 outages were a result of power losses in Verizon's Central Offices and subsequent backup power failures. Despite these adversities, 9-1-1 call takers, in their typical professional fashion, acted appropriately to save life and property using the best information and resources they had available to them at the time.

It's important to note that while the June 29 Derecho was unique in its ferocity, nothing unique to the Derecho caused the 9-1-1 failure. As Verizon reported, one of its generators failed due to air in the fuel line; another failed due to a defect in its auto-start mechanism. This suggests that as we consider additional requirements and procedures to make emergency communications more resilient, we must not overlook the importance of compliance with and proper execution of the requirements and procedures that are already in place.

APCO is a national standards-making body in the area of public safety communications. These standards address many of the areas that governing authorities and call center managers must consider when assessing their level of preparedness and survivability against a wide range of natural and man-made events. One of the standards addresses network monitoring. A failure of power and backup power at Verizon's central office should have resulted in an immediate alarm state at its network operations center and should have generated an urgent response by carrier maintenance crews and technicians to resolve issues and restore generator power. Instead, it seems that Verizon personnel were not fully aware of the equipment failures and the subsequent impact on 9-1-1 call delivery. Therefore, carriers should test their generators and uninterrupted power supplies (UPS) under load conditions regularly, and report the results of their tests to the FCC's Public Safety & Homeland Security Bureau within three business days, and complete a successful retest if needed and report those results within 24 hours.

Compounding the impact of the 9-1-1 outages was the lack of outage reporting and other communications from Verizon to emergency call centers. In critical times of outages when systems fail, it is imperative that there be direct contact between emergency call centers and an on-call representative of the local carrier. Verizon has acknowledged that the normal means of such communication was itself disrupted by the outages. 9-1-1 centers need immediate, meaningful, and actionable information concerning outages impacting the carriers that serve them.

Carriers should establish hardened and redundant links to disseminate outage information to emergency call centers in their service areas. They should also utilize and regularly test an emergency notification system that would timely notify public safety officials of any events that impact the delivery of or ability to make 9-1-1 calls.

Today's 9-1-1 networks are based upon many decades-old technologies, which have their own inherent limitations and challenges. Thus, while as mentioned earlier, service providers could implement a number of sensible improvements right away to assure better resiliency, APCO also

looks forward to working with local exchange carriers and other 9-1-1 system service providers as Next Generation 9-1-1 technology is deployed. NG9-1-1 holds great promise to assure a level of diversity and redundancy that greatly exceeds current capabilities.

Let me next remark on yesterday's 11<sup>th</sup> anniversary of the events of September 11<sup>th</sup>, and the transformation in public safety communications we are about to witness with enactment of the public safety provisions of the Middle Class Tax Relief and Job Creation Act of 2012. We at APCO remain very appreciative of the work of this Congress in passing this especially important legislation, which will enable the deployment of an advanced, public safety broadband network with a nationwide level of interoperability from the start.

By sheer coincidence, the statutory deadline for the appointments to the nationwide governance body established under this legislation, the First Responder Network Authority, or "FirstNet," fell during APCO's annual conference on August 20<sup>th</sup>. We were honored to have hosted Acting Secretary of Commerce Dr. Rebecca Blank at our conference as she publicly announced the non-federal board members. We look forward to working with the FirstNet Board to successfully implement the public safety legislation.

Similar to the promise of Next Generation 9-1-1 technology, the Long Term Evolution or "LTE" technology that will form the basis of the public safety broadband network will inherently lead to improved resiliencies and redundancies in wireless broadband communications. Furthermore, the legislation itself rightly mandates that in carrying out its duties and responsibilities, FirstNet is to ensure the resiliency of the network. This extends to FirstNet's obligation to consult with state and local jurisdictions concerning the adequacy of hardening, security, reliability, and resiliency requirements. Finally, I am hopeful that with the legislation's emphasis on establishing public/private partnerships with a variety of commercial mobile service providers, infrastructure owners, and backhaul providers, this too will lead to a highly resilient, advanced wireless broadband communications network for first responders.

APCO looks forward to working with this Subcommittee and all stakeholders to ensure that public safety communications reach a new level of resiliency and sophistication.

Thank you again for the invitation to appear before you, and I welcome any questions you may have.